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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/044,628 | 01/10/2002 | Joseph C. Rapuano | 17561-069 | 8607 |

7590 03/09/2005

MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY and POPEO, P.C.
One Financial Center
Boston, MA 02111

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| EXAMINER |
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GOFF II, JOHN L

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| ART UNIT | PAPER NUMBER |
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1733

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,628

Applicant(s)

RAPUANO ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 22 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 13-21, 23 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 12/14/04. The previous 35 USC 112 rejections have been overcome.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-9, 11, 12-21, 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston (U.S. Patent 4,875,283) in view of any one of Pedretti (WO 00/16596), Gotz (U.S. Patent 5,354,409), Fisher et al. (U.S. Patent 5,942,314), or Held (U.S. Patent 4,579,612).

Johnston discloses a method for producing a plurality of printed wiring boards in a single pressing step wherein each wiring board comprises two layers of copper foil (i.e. conductive foil) with a layer of prepreg (i.e. dielectric) sandwiched therebetween and each wiring board is

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separated by a layer of aluminum foil (i.e. protective-carrier sheet) (the aluminum foil layer having a thickness in the range from 0.127 mm to about 0.635 mm). Johnston teaches the method comprises steps: (a) sandwiching a prepreg layer between two layers of copper foil, (b) covering at least one of the layers of copper foil with a layer of aluminum foil, and (c) repeating steps (a) and (b) to form a “book” of wiring boards wherein each layer of copper foil is sandwiched between a layer of prepreg and a layer of aluminum foil without the copper foil layers bonded to the aluminum foil layer or prepreg layer (Figure 6 and Column 5, lines 39-49 and Column 6, lines 13-30). Additionally, Johnston may be further interpreted to teach a method comprising steps: (a) sandwiching a layer of aluminum foil between two layers of copper foil, (b) covering one of the layers of copper foil with a layer of prepreg, and (c) repeating steps (a) and (b) to form a “book” of wiring boards without the copper foil layers bonded to the aluminum foil layers or prepreg layers. Johnston does not specifically recite the source of the copper foil or aluminum foil. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the sandwiching and covering steps of the method taught by Johnston wherein the copper foil layers and aluminum foil layers are provided as extended from a roll supply as this was a well known and conventional technique in the art for continuously supplying (i.e. less time consuming) layers of this type (including less opportunity for contamination (e.g. by dust)) to a bonding process as shown for example by any one of Pedretti, Gotz, Fisher et al., or Held.

Regarding the particular layer sandwiching and covering steps, as noted above Johnston may be interpreted to disclose both methods required by the claims. Furthermore, each method forms an identical wiring board such that it would have been well within the purview of one of

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ordinary skill in the art at the time the invention was made to form the wiring boards taught by Johnston in any suitable, experimentally determined manner of sandwiching and covering steps as doing so would have required nothing more than ordinary skill and routine experimentation with all methods forming identical wiring boards to be pressed.

Pedretti, Gotz, Fisher et al., and Held are exemplary of the well known and conventional technique for continuously supplying layers such as copper foil, aluminum foil, prepreg, etc. to a process for bonding "lay-ups" of the supplied layers wherein the layers are continuously provided as extending from a roll supply (Figure 1 and Page 4, lines 7-11 and Page 6, lines 8-24 of Pedretti, Figure 1 and Column 1, lines 14-23 and 55-63 and Column 4, lines 24-32 and 41-42 of Gotz and Column 1, lines 6-12 and Column 5, lines 23-28 of Fisher et al. and Figure 1 and Column 3, lines 62-66 and Column 4, lines 3-8 of Held).

Regarding claim 25, absent any unexpected results, it would have been well within the purview of one of ordinary skill in the art at the time the invention was made to experimentally determine the most efficient, least time-consuming order for cutting the layers of the book as doing so would have required nothing more than ordinary skill and routine experimentation.

Allowable Subject Matter

5. Claims 10 and 22 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:
See paragraph 10 of the Office Action mailed 6/21/04.

Response to Arguments

7. Applicant's arguments filed 12/14/04 have been fully considered but they are not persuasive. Applicants argue, "Pedretti, Gotz, Fisher et al., and Held were cited in support of the purported obviousness of this modification to the process of Johnston. However, as discussed below, none of these references disclose or suggest extending the protective-carrier sheeting from a source without bonding (i.e., absent bonding the conductive-foil layer to the protective-carrier sheeting or to a dielectric layer before stacking); nor do the references disclose or suggest means for carrying out such a process wherein each of the layers is unbonded." Pedretti, Gotz, Fisher et al., and Held are cited merely to show the well known technique of continuously supplying layers **such as copper foil, aluminum foil, prepreg, etc. from a supply roll** to a process for bonding "lay-ups" of the supplied layers which would be directly applicable to the process taught by Johnston that forms "lay-ups" of unbonded layers for benefits including a more time efficient supply of the layers. Applicants further argue Gotz and Held do not specifically disclose a layer of protective-carrier sheeting. As noted above, Gotz and Held are cited as exemplary of the general technique of supplying layers to a process such as Johnston from supply rolls, it being further noted the processes of Gotz and Held while not including aluminum foil layers include unbonded copper foil and dielectric layers continuously supplied from a supply roll (See in particular Column 1, lines 55-58 of Gotz and Column 3, lines 62-63 and Column 4, lines 3-5 of Held).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

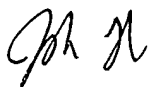
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300